RESPONSE TO COMMENTS

Alaska Nitrogen Products LLC
Permit Number AK-000050-7

A draft National Pollutant Discharge Elimination System (NPDES) permit for Alaska Nitrogen Products LLC (ANP) was issued for Public Notice on July 26, 2000 in the Kenai Peninsula Clarion. The Public Notice initiated a 45-day public comment period expiring on September 11, 2000. The Environmental Protection Agency (EPA) received written comments from ANP dated September 8, 2000.

This Response To Comments document is a summary of the significant comments related to the draft NPDES permit and the EPA's responses. Comments received on the Fact Sheet are addressed in this document as they relate to the permit language/conditions. The Section of the permit the comment refers to is identified in parentheses at the end of the comment.

1 **Comment**: The pH range listed in the draft permit is from 6.5 - 8.5 standard units (s.u.) and the existing range was from 6.0 - 9.0 s.u. This change would significantly increase monitoring, maintenance, and treatment costs, with no significant benefit to the environment (Section I.A.2).

Response: The Alaska Department of Environmental Conservation (ADEC) has provided ANP with a chronic pH mixing zone (described as a vertical cylinder measuring 88 meters in radius from the point of discharge) in their final 401 certification of the permit. Therefore, the pH range shall be from 6.0 - 9.0 s.u. in the final permit. ADEC certifies that the mixing zone is appropriate and provides reasonable assurance that the existing uses of Cook Inlet outside of the mixing zone are maintained and fully protected.

2. **Comment**: The effluent limitations listed in Table 1 of the draft permit for total ammonia and organic nitrogen are in error. The effluent guidelines consider average production rates of 3,619 tons ammonia per day and 3,089 tons urea per day (Section I.A.3).

Response: Corrections have been made to the final permit regarding the technology-based limits for total ammonia and organic nitrogen. As explained in the Fact Sheet, federal regulations found at 40 CFR Section 418.23 of Subpart B and Section 418.33 of Subpart C establish effluent limitations for ammonia (as N), organic nitrogen (as N), and pH based on annual average production. To calculate effluent limitations, the annual average production is multiplied by the effluent guidelines.

Effluent Limitations from 40 CFR Part 418		
Effluent characteristics	**Ammonia Effluent Limitations**	
	Daily Maximum Limit	**Monthly Average Limit**
Ammonia (as N), lbs/1,000 lbs of product	0.05	0.025
	Urea Effluent Limitations	
Ammonia (as N), lbs/1,000 lbs of product	0.53	0.27
Organic Nitrogen (as N) lbs/1,000 lbs of product	0.86	0.46

Therefore as an example, the calculation for the maximum daily ammonia limit would be as follows:

(0.05 lbs ammonia/1,000 lbs product)(3,619 tons/day)(2,000 lbs/ton) = 361.9 lbs/day
+(0.53 lbs ammonia/1,000 lbs product)(3,089 tons/day)(2,000 lbs/ton) = 3,274 lbs/day
3,636 lbs/day

The corrected permit effluent limits are as follows and have been included in the final permit:

Effluent Limits for Alaska Nitrogen Products		
Parameter	**Daily Maximum Limit**	**Monthly Average Limit**
Ammonia (as N), lbs/day	3,636	1,849
Organic Nitrogen (as N), lbs/day	5,313	2,842

3. **Comment**: ANP understands that it is a new EPA policy to include both mass and concentration limits in permits. Nonetheless, the concentration limits for ammonia and organic nitrogen are a major concern. In our present operation we are not capable of consistently complying with the concentration limits. Over the past five years, the monthly average ammonia concentration has been greater than 142 mg/L on 20 occasions. ANP believes that if concentration limits are included in the permit, they should be based on either the technology available or on water-quality considerations to protect the receiving water.

The concentration limits in the draft permit were calculated by dividing the mass-based limits by the facility's maximum recorded effluent flow over the past five years. However, the average effluent flow is less than half the maximum rate. Therefore, the concentration limits will require ANP to meet mass limits that are half or less of the "best available technology economically achievable."

If concentration limits must be set, than ANP requests that only the maximum daily concentration limit apply, and that it be based on average effluent flow of 737,000 gallons per day. ANP feels that monthly average concentration limits only serves to limit routine operation and penalizes us for water conservation (Section I.A.3).

Response: Concentration limits for total ammonia and organic nitrogen have been removed from the final permit. It is the EPA's intension that the regional policy require mass-based limits when concentration limits are developed from effluent guidelines (i.e., are technology-based). This policy is supported by federal regulation 40 CFR 122.45(f), which requires mass limitations in permits with a few exceptions. In contrast, the Region 10 policy is not meant to require concentration limits when mass-based limits are directly developed from effluent guidelines (such as 40 CFR 418 Fertilizer Manufacturing Point Source Category). When limits are developed from water quality standards both concentration and mass-based limits shall be included in the permit. As stated in the Fact Sheet, technology-based limits for total ammonia and organic nitrogen were included in the permit because they are more stringent than water quality-based limits due to the dilution in the certified mixing zone.

4. **Comment**: The draft permit contains an additional requirement to continuously monitor and record the temperature of the effluent at the outfall. ANP does not currently have a system in place to perform this function. ANP requests that the EPA allow 120 days from the effective date of the final permit to meet this requirement. ANP would use this time to install a new system, test the output and recording functions, and develop procedures for the monitor's operation and quality assurance (Section I.A.3).

   Response: This request has been granted. Table 1 (found in Section I.A of the permit) now contains a footnote stating that monitoring and reporting of effluent temperature is required **120 days from the effective date of the permit**.

5. **Comment**: The draft permit requires whole effluent toxicity (WET) testing four times per year, rather than the current requirement of once per year. ANP believes that an increase in the frequency of the toxicity testing is unwarranted. Previous data has shown no exceedences of the proposed chronic toxicity trigger of 721 TUc. ANP recognizes that

current data is useful for reissuing the permit. Therefore, ANP would agree to quarterly testing during the first year, with the frequency being reduced to once per year for the remainder of the permit term (Section I.B).

Response: ANP's previous 1989 permit required quarterly chronic WET testing (that was later reduced to annual testing) and quarterly acute WET testing during the first effective year of the permit. Although previous monitoring has not shown an exceedence of the draft toxicity trigger of 721 TUc or the final toxicity trigger of 224 TUc (based on the final chronic mixing zone for metals, see response #11) EPA feels that the nature and volume of ANP's discharge constitutes quarterly monitoring. ADEC's 401 certification requires quarterly WET testing to "ensure that the requirements of 18 AAC 70.030 are met." ADEC considers quarterly monitoring appropriate for this discharge based on the types of pollutants discharged and existing WET data. Therefore, the quarterly chronic toxicity monitoring has been retained in the final permit.

6. **Comment**: The draft permit includes ambient monitoring of one background location, while the fact sheet calls for the background location plus three locations at the edge of the mixing zone and one location inside the mixing zone. ANP requests one background location only. ANP recognizes that the background level of total ammonia in Cook Inlet has not recently been analyzed and that this information would be useful for future analyses however, additional monitoring at the mixing zone and inside the mixing zone is unnecessary.

ANP also requests that after two years of quarterly sample collection, the sample frequency for the next two years be reduced to semiannually. After the fourth year no further analysis should be required.

Ice and wind during the winter months may prevent small watercraft from being able to safely collect ambient water samples, especially during January, February, and March. ANP requests flexibility when the ambient samples are taken. For example, if weather conditions prevent collection during the first quarter then two samples, spaced at least four weeks apart, may be collected during the second quarter (Section I.C).

Response: Ambient monitoring for total ammonia is useful at the edge of the chronic mixing zone to determine if water quality standards are being met and help refine the model. In addition, monitoring is useful within the mixing zone to help refine the model and decrease the physical size of the mixing zone. ADEC's 401 certification requires that five (5) ambient sites be established for ammonia, pH, temperature, and salinity. These ambient monitoring sites include one background site, three sites at the edge of the chronic ammonia mixing zone, and one site within the mixing zone. Section I.C. of the final permit (including Table 2, *Ambient Monitoring Requirements)* has been modified to reflect these five ambient monitoring stations.

ADEC's 401 certification allows quarterly monitoring for one year if the ambient samples are collected the same day as the weekly effluent monitoring (required in Table 1 of the permit). Section I.C has been changed to include this monitoring frequency and condition. The ambient monitoring is useful to develop a history of background information and will be used when the permit comes up for reissuance.

The EPA has included a footnote in Table 2 to account for hazardous sampling conditions in Cook Inlet. The footnote reads "If poor weather conditions prevent sampling during a quarter, then two samples may be taken the following sampling quarter provided these two samples are spaced at least four weeks apart." The phrase "sampling quarter" has been defined in Section I.C as "every three months beginning with the month following the effective date of the permit."

7. **Comment**: The draft permit requires the development of a quality assurance plan (QAP) for monitoring required under the permit. ANP requests 90 days rather than the proposed 60 days from the effective date of the final permit. ANP would use this period to convert current procedures into the required format and add new procedures for the new monitoring requirements for temperature and ambient monitoring (Section I.D).

   Response: The final permit has been changed to allow **90 days from the effective date of the permit** to complete and implement the QAP.

8. **Comment**: The draft permit contains several additions to the Best Management Practices (BMP) for this facility. The additional requirements include establishing a program to identify and repair leaking equipment, implementing a monitoring program for the effluent lines and ponds, and training requirements for plant personnel. ANP requests that the EPA allow 90 days from the effective date of the final permit to incorporate these programs into the current BMP Plan (Section II.A).

   Response: This request has been granted. Section II.A now reads "The following BMPs are required in the BMP/P2 plan, to the extent that they have not already been incorporated, no later than **90 days from the effective date of the permit**."

9. **Comment**: Section II.A *Best Management Practices* refers to five products (Sulfinal, diisopropanolmanie, oxazolidone, UF85, and chlorinated solvents). Of these products:

   > Sulfinal and diisopropanolamine (DIPA) are no longer used. These chemicals were previously used in our ammonia production process to remove carbon dioxide from the ammonia systhesis stream. They broke down to form a hazardous waste called oxazolidone. Several years ago, ANP replaced sulfinal and DIPA with a new process chemical called Methyldiethanolamine (MDEA).

This product does not break down to form a waste stream. Therefore, MDEA is considered a process chemical covered in Item 2 of Section II.A.

Urea formaldehyde (UF-85) is an additive used in the urea process to strengthen and prevent breakage of the urea prills and granules. Therefore, UF-85 is a process chemical, not a waste product that is covered in Item 2 of Section II.A.

Chlorinated solvents are no longer used. At one time chlorinated solvents were used during maintenance activities, but were phased out from the facility several years ago. At this time, only very small quantities of chlorinated solvents are purchased in aerosol cans for cleaning of sensitive electronic equipment.

Therefore, ANP requests that either Item 1 be removed from the permit (because Sulfinal, DIPA, Oxazolidone, and chlorinated solvents are not longer present at the facility and UF-85 is a process chemical covered under Item 2) or the EPA clarify which waste products Item 1 refers to (i.e., drummed regulated wastes, discharged materials, etc.; Section II.A.1 and 2).

Response: The EPA has removed the above listed waste products from Item 1 in Section II.A of the permit. The condition has been retained however, because prohibiting the discharge of spilled waste products through the outfall line is an important BMP. Leaving this provision in the permit prevents such practices from happening if new waste products are introduced during the permit term. The EPA has not listed specific waste products in Item 1 because Item 1 is not intended to be limited to only the items listed.

10. **Comment**: Item 5 under Best Management Practices calls for ANP to implement a monitoring program designed to detect leakage from the treatment ponds and the lines leading to the ponds. ANP requests that the EPA clarify this requirement, so that it is not misinterpreted to mean monitoring wells and/or secondary containment with a leak detection system. It is ANP's understanding that this is to be an inspection program only, which would include a set schedule and procedure for inspections and maintenance (Section II.A.5).

Response: Best management practices should prevent or minimize the generation and the potential for release of pollutants from the facility to the waters of the United States through normal operations and ancillary activities. They are not limited to only inspections. In order to clarify the intent of the requirement, the EPA has changed the permit to specify that the permittee compare the influent volume with the effluent volume (accounting for evaporation) to determine if/how much loss is from within the system (including seepage from the treatment ponds and/or leaks from the effluent lines).

11. **Comment**: An alternate diffuser has been proposed and ADEC has certified a new

mixing zone consistent with the diffuser. The new diffuser features a single eight-inch diameter vertical diffuser pipe with two sets of two horizontally opposed ports at depths of 16 and 35 feet below the Mean Lower Low Water (MLLW). The diffuser proves better mixing and has allowed the chronic ammonia mixing zone to decrease from 507 m to 221 m in radius. (Section III of the Fact Sheet).

Response: ADECs final 401 certification includes new mixing zones for the alternate diffuser. Although the size of the mixing zone has decreased, the dilution allowed in the receiving water for ammonia remains the same. Because the effluent limits contained in the permit are not influenced by the size of the mixing zone(s), the final mixing zones are provided as information only:

Mixing Zones for Alaska Nitrogen Products LLC		
Parameter	**Acute**	**Chronic**
Ammonia dilution size	 77:1 35 meters in radius	 721:1 221 meters in radius
Metals (Hg, Zn, Cu, As) dilution size	 8.7:1 2.5 meters in radius	 224:1 88 meters in radius
Whole Effluent Toxicity dilution size	N/A	 224:1 88 meters in radius
pH dilution size	N/A	 224:1 88 meters in radius

12. **Comment**: ANP would like to note that the Compliance History section of the fact sheet indicates that ANP violated its ammonia limitation 12 times from January 1989 to August 1999. Alaska Nitrogen Products is not aware of any ammonia violations to date (Section IV.B of the fact sheet).

Response: EPA has reviewed the discharge monitoring reports (DMRs) from this time period and verified that violations of the average monthly limits did not occur during this review period. It appears that maximum monthly limits were inadvertently entered into the Permits Compliance System (PCS, database) as average monthly limits. The necessary corrections have been made to PCS.

13. **Comment**: The last paragraph of Section VI.D of the fact sheet lists various records that must be maintained to show compliance with the biocide provisions. The biocide records include the dates of use, quantity used, maximum concentration in the discharge on those dates, and other relevant information. The draft permit does not contain these requirements for biocide records. ANP does not believe that these requirements are necessary. Provisions in the draft permit allow EPA and ADEC to review each biocide 30 days prior to its proposed use. If these records will be required in the final NPDES permit, then the exact record-keeping requirements should be listed un Section III *Monitoring, Recording, and Reporting Requirements* of the permit (Section VI.D of the fact sheet).

    Response: Maintaining adequate discharge records is an important part of a NPDES permit. These records are important when explaining toxicity test results, showing compliance with the biocides provisions in Section I.A.5 of the permit, tracking historical use etc. Section III.E *Records Contents* of the permit has been modified to include the following requirements "Compliance with the biocide provisions in Part I.A.5 shall include keeping records for the produce, dates of use, quantity used, maximum estimated concentration in the discharge on those dates, and any other relevant information."

The following additional conditions are required by the Alaska Department of Environmental Conservation 401 certification.

14. **401 Certification Condition**: A pollution prevention framework shall be submitted to ADEC no later than one year from the effective date of the permit. ADEC shall have the right to disapprove the P2 Framework within 60 days of receipt by ADEC, after which time such changes shall be deemed approved if ADEC does not disapprove them.

    Response: Consistent with the state's certification, the EPA has included the following language in Section II.B of the final permit. "The Permittee shall submit a framework document to ADEC for incorporating pollution prevention into Alaska Nitrogen facility activities that discharge (or have the potential to discharge) into waters of state no later than **one year from the effective date of the permit**. ADEC shall have the right to disapprove the P2 Framework within 60 days of receipt by ADEC, after which time such changes shall be deemed approved if ADEC does not disapprove them."

15. **401 Certification Condition**: Annual Pollution Prevention (P2) Reports shall be submitted to ADEC.

Response: The following language (consistent with the certification) has been included in Section II.D of the Permit:

D. Annual Pollution Prevention Reports

The Permittee shall prepare annual P2 reports on the status of efforts to meet stated P2 objectives, goals, and priorities, and submit the report to ADEC. The first progress report shall be due **two years after the effective date of the permit**. Subsequent reports shall be due **annually** on the anniversary of the effective date. The P2 reports shall:

1. Identify progress towards meeting P2 objectives, goals, and priorities. Problems encountered and/or highlights of efforts to prevent pollution shall also be identified.
2. Describe P2 projects implemented and for each project, to the extent possible (considering technical and economic feasibility) identify:
    i. The type and quantity of toxic and/or hazardous products reduced or eliminated and;
    ii. The type and quantity of waste streams reduced or eliminated

16. **401 Certification Condition**: The permit should require the following BMP requirement for sludge handling "The Permittee must submit plans for ADEC review and written approval for sludge handling and disposal, in accordance with 18 AAC 72.600(c)(5), no later than **90 days from the effective date of the permit**."

Response: This condition has been added as Section II.B of the permit.

17. **401 Certification Condition:** Monthly DMRs and any reports should be sent to ADEC's Anchorage office (not Fairbanks).

Response: Section II.B *Reporting of Monitoring Results* now includes the following address:

Alaska Department of Environmental Conservation
Attn: Division of Air and Water Quality
555 Cordova Street
Anchorage, Alaska 99501